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Application No.: 10/791,906

AMENDMENTS TO THE CLAIMS:*Please amend the claims as follows:*

1. (Currently Amended) An image recording apparatus for recording an image by irradiating a printing plate with a light beam, comprising:

a holding drum for holding a printing plate;

a light emission part for irradiating said printing plate with a light beam to perform writing;

a rotation mechanism for scanning an irradiation position of said light beam on said printing plate in a main scan direction by rotating said holding drum relatively to said light emission part;

a moving mechanism for scanning said irradiation position in a subscan direction by moving said light emission part relatively to said holding drum along a direction parallel to a rotation axis of said holding drum;

a storage part for storing data of an original image;

an operation part for generating data of a modified image obtained by substantially modifying width of said original image in said subscan direction in consideration of extension of a paper caused by dampening water in printing with said printing plate, said modified image indicating said original image [[is]] distorted in said subscan direction without being distorted in said main scan direction; and

a control part for controlling emission of said light beam according to said data of said modified image while shifting writing timing in said main scan direction by changing a cycle of a writing clock.

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2. (Original) The image recording apparatus according to claim 1, wherein
said operation part modifies said width of said original image in said subscan direction by
deleting or adding pixels.

3. (Original) The image recording apparatus according to claim 2, wherein
said operation part divides a pixel group constituted of pixels aligned in said subscan
direction into a plurality of modification unit pixel groups as many as pixels to be deleted or
added and determines a position of one pixel to be deleted or added from/to each of said plurality
of modification unit pixel groups on the basis of a random number.

4. (Original) The image recording apparatus according to claim 3, wherein
the number of pixels in each of said plurality of modification unit pixel groups is half to
twice a value obtained by dividing the number of pixels in said pixel group by the number of said
pixels to be deleted or added.

5. (Previously presented) The image recording apparatus according to claim 2, wherein
said storage part stores processing instruction data indicating positions of pixels to be
deleted or added in said original image and substantially indicating distortion of said original
image in said modified image, and
said operation part generates data of said modified image on the basis of said processing
instruction data.

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6. (Previously presented) The image recording apparatus according to claim 5, wherein said processing instruction data comprises:

commands for inserting a blank to one end of said subscan direction in an image space where said modified image is generated; and

commands for deleting or adding pixels in aligning pixels of said original image from said one end to the other end following said blank.

7. (Original) The image recording apparatus according to claim 6, wherein said light emission part emits a plurality of light beams aligned in said subscan direction, and

data of said modified image generated with said commands for inserting a blank is data for performing writing while continuously moving irradiation positions of said plurality of light beams in said subscan direction.

8. (Original) The image recording apparatus according to claim 1, wherein recording of an image onto said printing plate is started on the basis of some data before said operation part generates the whole data of said modified image.

9. (Original) The image recording apparatus according to claim 1, wherein said operation part obtains data of said modified image and data of shifting of writing timing in said main scan direction by said control part, on the basis of a printing result of a test pattern.

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10. (Original) The image recording apparatus according to claim 9, further comprising an image pickup part for performing an image pickup of a paper on which said test pattern is printed, to acquire said printing result.

11. (Currently Amended) A printing apparatus, comprising:

a holding drum for holding a printing plate;

a light emission part for irradiating said printing plate with a light beam to perform writing;

a rotation mechanism for scanning an irradiation position of said light beam on said printing plate in a main scan direction by rotating said holding drum relatively to said light emission part;

a moving mechanism for scanning said irradiation position in a subscan direction by moving said light emission part relatively to said holding drum along a direction parallel to a rotation axis of said holding drum;

a storage part for storing data of an original image;

an operation part for generating data of a modified image obtained by substantially modifying width of said original image in said subscan direction in consideration of extension of a paper caused by dampening water in printing with said printing plate, said modified image indicating said original image [[is]] distorted in said subscan direction without being distorted in said main scan direction;

a control part for controlling emission of said light beam according to said data of said modified image while shifting writing timing in said main scan direction by changing a cycle of a writing clock; and

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a printing mechanism for performing printing with said printing plate on which an image is recorded by said light emission part.

12. (Original) The printing apparatus according to claim 11, wherein printing is performed by using said printing plate held by said holding drum.

13. (Original) The printing apparatus according to claim 11, wherein said printing mechanism performs multicolor printing.

14. (Original) The printing apparatus according to claim 11, wherein said operation part modifies said width of said original image in said subscan direction by deleting or adding pixels.

15. (Original) The printing apparatus according to claim 11, wherein recording of an image onto said printing plate is started on the basis of some data before said operation part generates the whole data of said modified image.

16. (Original) The printing apparatus according to claim 11, wherein said operation part obtains data of said modified image and data of shifting of writing timing in said main scan direction by said control part, on the basis of a printing result of a test pattern.

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17. (Previously presented) The printing apparatus according to claim 16, further comprising

an image pickup part for performing an image pickup of a paper on which said test pattern is printed, to acquire said printing result.

18. (Currently Amended) An image recording method of recording an image onto a printing plate, comprising the steps of:

a) preparing data of an original image;

b) generating data of a modified image obtained by substantially modifying width of said original image in a predetermined subscan direction in consideration of extension of a paper caused by dampening water in printing with a printing plate, said modified image indicating said original image [[is]] distorted in said subscan direction without being distorted in [[said]] a main scan direction orthogonal to said subscan direction; and

c) performing image recording by irradiating [[a]] said printing plate held by a holding drum with a light beam,

wherein an irradiation position of said light beam on said printing plate is scanned in [[a]] said main scan direction by rotating said holding drum relatively to a light emission part, said irradiation position is scanned in said subscan direction by moving said light emission part relatively to said holding drum along a direction parallel to a rotation axis of said holding drum, and said light beam is emitted from said light emission part on the basis of data of said modified image in synchronization with scanning in said main scan direction and said subscan direction while shifting writing timing for said light beam in said main scan direction by changing a cycle of a writing clock in said step c).

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19. (Original) The image recording method according to claim 18, wherein said width of said original image in said subscan direction is modified by deleting or adding pixels in said step b).

20. (Original) The image recording method according to claim 19, wherein a pixel group constituted of pixels aligned in said subscan direction is divided into a plurality of modification unit pixel groups as many as pixels to be deleted or added and a position of one pixel to be deleted or added from/to each of said plurality of modification unit pixel groups is determined on the basis of a random number in said step b).

21. (Original) The image recording method according to claim 20, wherein the number of pixels in each of said plurality of modification unit pixel groups is half to twice a value obtained by dividing the number of pixels in said pixel group by the number of said pixels to be deleted or added.

22. (Previously presented) The image recording method according to claim 19, wherein data of said modified image is generated on the basis of processing instruction data indicating positions of pixels to be deleted or added in said original image and substantially indicating distortion of said original image in said modified image in said step b).

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23. (Previously presented) The image recording method according to claim 22, wherein said processing instruction data comprises:

commands for inserting a blank to one end of said subscan direction in an image space where said modified image is generated; and

commands for deleting or adding pixels in aligning pixels of said original image from said one end to the other end following said blank.

24. (Original) The image recording method according to claim 23, wherein a plurality of light beams aligned in said subscan direction are emitted to said printing plate in said step c), and

data of said modified image generated with said commands for inserting a blank is data for performing writing while continuously moving irradiation positions of said plurality of light beams in said subscan direction.

25. (Previously presented) The image recording method according to claim 18, wherein recording of an image onto said printing plate is started on the basis of some data before said operation part generates the whole data of said modified image.

26. (Original) The image recording method according to claim 18, wherein data of said modified image and data of shifting of writing timing in said main scan direction are obtained on the basis of a printing result of a test pattern.

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27. (Original) The image recording method according to claim 26, further comprising the step:

acquiring said printing result by performing an image pickup of a paper on which said test pattern is printed.

28. (Previously presented) An image modification method of modifying width of an image in a predetermined direction, comprising the steps of:

dividing a pixel group constituted of pixels aligned in a predetermined direction into a plurality of modification unit pixel groups as many as pixels to be deleted or added, said pixel group being not divided at regular intervals;

determining a position of one pixel to be deleted or added from/to each of said plurality of modification unit pixel groups on the basis of a random number; and

modifying said pixel group by deleting or adding said one pixel from/to a position determined in each of said plurality of modification unit pixel groups,

wherein the number of pixels in each of said plurality of modification unit pixel groups is half to twice a value obtained by dividing the number of pixels in said pixel group by the number of pixels to be added or deleted.

29. (Canceled).

30. (Cancelled)

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31. (New) The image recording apparatus according to claim 1, wherein said control part performs writing in consideration of extension of said paper in said main scan direction in said printing.

32. (New) The image recording apparatus according to claim 11, wherein said control part performs writing in consideration of extension of said paper in said main scan direction in said printing.

33. (New) The image recording method according to claim 18, wherein writing is performed in consideration of extension of said paper in said main scan direction in said printing in said step c).

34. (New) An image recording apparatus for recording an image by irradiating a printing plate with a light beam, comprising:

a holding drum for holding a printing plate;

a light emission part for irradiating said printing plate with a light beam to perform writing;

a rotation mechanism for scanning an irradiation position of said light beam on said printing plate in a main scan direction by rotating said holding drum relatively to said light emission part;

a moving mechanism for scanning said irradiation position in a subscan direction by moving said light emission part relatively to said holding drum along a direction parallel to a rotation axis of said holding drum;

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a storage part for storing data of an original image;

an operation part for generating data of a modified image obtained by substantially modifying width of said original image in said subscan direction, said modified image indicating said original image distorted in said subscan direction without being distorted in said main scan direction; and

a control part for controlling emission of said light beam according to said data of said modified image while shifting writing timing in said main scan direction by changing a cycle of a writing clock wherein

said operation part modifies said width of said original image in said subscan direction by deleting or adding pixels where said operation part divides a pixel group constituted of pixels aligned in said subscan direction into a plurality of modification unit pixel groups as many as pixels to be deleted or added and determines a position of one pixel to be deleted or added from/to each of said plurality of modification unit pixel groups on the basis of a random number, and

the number of pixels in each of said plurality of modification unit pixel groups is half to twice a value obtained by dividing the number of pixels in said pixel group by the number of said pixels to be deleted or added.

35. (New) A printing apparatus for recording an image by irradiating a printing plate with a light beam, comprising:

a holding drum for holding a printing plate;

a light emission part for irradiating said printing plate with a light beam to perform writing;

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a rotation mechanism for scanning an irradiation position of said light beam on said printing plate in a main scan direction by rotating said holding drum relatively to said light emission part;

a moving mechanism for scanning said irradiation position in a subscan direction by moving said light emission part relatively to said holding drum along a direction parallel to a rotation axis of said holding drum;

a storage part for storing data of an original image;

an operation part for generating data of a modified image obtained by substantially modifying width of said original image in said subscan direction, said modified image indicating said original image distorted in said subscan direction without being distorted in said main scan direction; and

a control part for controlling emission of said light beam according to said data of said modified image while shifting writing timing in said main scan direction by changing a cycle of a writing clock; and

a printing mechanism for performing printing with said printing plate on which an image is recorded by said light emission part, wherein

said operation part modifies said width of said original image in said subscan direction by deleting or adding pixels where said operation part divides a pixel group constituted of pixels aligned in said subscan direction into a plurality of modification unit pixel groups as many as pixels to be deleted or added and determines a position of one pixel to be deleted or added from/to each of said plurality of modification unit pixel groups on the basis of a random number, and

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the number of pixels in each of said plurality of modification unit pixel groups is half to twice a value obtained by dividing the number of pixels in said pixel group by the number of said pixels to be deleted or added.

36. (New) An image recording method of recording an image onto a printing plate, comprising the steps of:

a) preparing data of an original image;

b) generating data of a modified image obtained by substantially modifying width of said original image in a predetermined subscan direction, said modified image indicating said original image distorted in said subscan direction without being distorted in a main scan direction orthogonal to said subscan direction; and

c) performing image recording by irradiating a printing plate held by a holding drum with a light beam,

wherein an irradiation position of said light beam on said printing plate is scanned in said main scan direction by rotating said holding drum relatively to a light emission part, said irradiation position is scanned in said subscan direction by moving said light emission part relatively to said holding drum along a direction parallel to a rotation axis of said holding drum, and said light beam is emitted from said light emission part on the basis of data of said modified image in synchronization with scanning in said main scan direction and said subscan direction while shifting writing timing for said light beam in said main scan direction by changing a cycle of a writing clock in said step c),

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said width of said original image in said subscan direction is modified by deleting or adding pixels in said step b) where a pixel group constituted of pixels aligned in said subscan direction is divided into a plurality of modification unit pixel groups as many as pixels to be deleted or added and a position of one pixel to be deleted or added from/to each of said plurality of modification unit pixel groups is determined on the basis of a random number, and

the number of pixels in each of said plurality of modification unit pixel groups is half to twice a value obtained by dividing the number of pixels in said pixel group by the number of said pixels to be deleted or added.